

comprising

(a1) transforming plant cells with *Agrobacterium rhizogenes* containing a vector carrying a gene encoding a protein producing H<sub>2</sub>O<sub>2</sub> in a context which allows its expression in the plant;

or

(a2) transforming plant cells with *Agrobacterium rhizogenes* containing a recombinant DNA comprising both a gene encoding the H<sub>2</sub>O<sub>2</sub> producing protein and a gene encoding a protein of interest in a context allowing their expression in the plant;

(b) selecting the transformants which contain and express the gene encoding the H<sub>2</sub>O<sub>2</sub> producing protein or the gene encoding a protein of interest, by a peroxidase-based colorimetric test;

(c) regenerating the plants from the roots selected and monitoring the expression of the plantlets obtained by a peroxidase-based colorimetric test;

(d) sorting according to phenotype and optionally carrying out a molecular analysis of the progeny of the transgenic plants, allowing the selection or the confirmation of transgenic plants obtained containing only the transgene and not the T-DNA specific to *A. rhizogenes*.

17. (new) The method according to claim 16, wherein the colorimetric test in step (b) is carried out on a sample of the root.

18. (new) The method according to claim 16, wherein the colorimetric test in step (b) is carried out on a liquid medium for incubation after removing the agrobacteria.